## REMARKS

Claims 1-7 are pending in this application. The present amendment amends claims 1, 2, and 5-7. Upon entry of this amendment, claims 1-7 will be pending.

The Applicants respectfully submits that no new matter has been added. Support for the amendments is discussed below. It is believed that this Amendment is fully responsive to the Office Action dated **June 30, 2006**.

**The word "same" in claims 5 and 6 [renders] the claims indefinite.** (Office action page 2)

The rejection is overcome by the amendments to claims 5 and 6. In the amendments, the phrase "conducted in the presence of the same metallic copper catalyst" is deleted. Step (a) is amended to be "in the presence of the metallic copper catalyst" and step (b) is amended to be "in the presence of said metallic copper catalyst."

**The term "item 3" in claim 7 renders the claim indefinite.** (Office action page 2)

The rejection is overcome by the amendment to claim 7, amending "Item 3" to --claim 3--. Applicant submits that it is clear from the context of the claim that "Item 3" was a clerical error and should have been "claim 3."

**Claims 1-2 rejected under 35 U.S.C. 102(b) as being anticipated by Von Werner (USPN 4,587,366).** (Office Action page 2)

Reconsideration of the rejection is respectfully requested in view of the amendments to the claims.

Applicant notes that the claims have been amended in response to the Examiner's comments about the patentable weight given to the phrase "for use in an ethylene addition reaction to provide a polyfluoroalkylethyl iodide from a polyfluoroalkyl iodide and ethylene." Claim 1 has been amended, for clarity, to recite a composition that is the mixture of components used in the ethylene addition reaction, that is, a metallic copper catalyst, a polyfluoroalkyl iodide, and ethylene. In addition, claim 1 has been amended to limit the amount of metallic copper catalyst to an amount in the range of 0.5 to 10 wt% of the polyfluoroalkyl iodide. Support for this amendment may be found on page 9, line 7, of the specification.

Von Werner '366 generally discloses the addition of iodoperfluoroalkanes onto the C-C double bond of alkenes (column 1, line 7). The reference states in column 1, lines 19-22, that it is known to catalyze this reaction with catalysts which disintegrate into free radicals, such as azobis isobutyronitrile or organic peroxides. The Examiner cites the reference at column 1, lines 40-45, which discloses that it is known to react perfluoroalkyl copper(I) with alkenes, and that the perfluoroalkyl copper(I) can be formed *in situ* from perfluoroalkyl iodide and metallic copper.

Applicant notes that the reference generally discloses a process for performing the reaction using as the catalyst "at least one metal which, in the periodic table of the elements, has one of the

atomic numbers 24 to 30, 42 to 48 or 74 to 79 and is in finely divided form" (column 1, lines 58-66). Although this broad disclosure of atomic numbers would include copper (at. no. 29), copper is not explicitly listed in the examples of suitable metals in column 2, lines 8-13. Von Werner's inventive disclosure is too broad to be considered anticipatory of the use of copper in the present claims.

Applicant notes that the disclosure cited by the Examiner in column 1 of the reference is a discussion of the known art, and that the known art process in column 1, lines 34-49, of von Werner '366 does not anticipate the present claims as amended. Von Werner indicates that this process is based on *in situ* formation of the perfluoroalkyl copper(I), and that "the amount of copper may be less than (for example only a third of) the stoichiometrically calculated amount." However, "one-third of the stoichiometrically calculated amount" would be above the amount of 0.5 to 10% by weight of the polyfluoroalkyl in amended claim 1.

For example, in Comparative Example C of von Werner '366 (see Table in Columns 9-10), **1-iodoperfluorooctane** ($C_8$) (IV) is reacted with ethylene using **one-third** the stoichiometric amount of a copper catalyst (see footnote 8+ in Table). Von Werner '366 nowhere discloses the use of a metallic copper catalyst in an amount of 0.5 to 10 wt% relative to a polyfluoroalkyl iodide.

Moreover, 1-iodoperfluorooctane is not a $C_{1-6}$ polyfluoroalkyl iodide, as required by claim 2.

Claims 1-2 are therefore not anticipated by von Werner '366.

**Claims 3-4 are rejected under 35 U.S.C. §103(a) as being unpatentable over Konrad et al. [sic] (Journal of Fluorine Chemistry, 28 (1985) 229-233) in view of Von Werner (USPN 4,587,366).** (Office Action page 3)

The Examiner refers to the primary reference as "Konrad et al.," but the author is Konrad Von Werner, and Applicant respectfully submits that the author should be referred to as "Von Werner." Applicant will refer to this document as "Von Werner (1985)."

The Examiner cites Von Werner (1985) at "formula 1 [sic]," apparently referring to the formula on page 229, and in Table 1, as teaching a process for producing polyfluoroalkylethyl iodide in the presence of a noble metal, in an alkene addition reaction. The catalyst in Von Werner is a noble metal transition metal catalyst such as ruthenium or platinum, or a homogeneous catalyst such as a carbonyl complex of a group VIII metal, such as a nickel complex. The Examiner also cites Von Werner '366 as using metallic copper to prepare the fluoroalkyl iodide, and states that it would have been obvious "to replace the noble metal catalyst in the reaction taught by [Von Werner (1985)] with a metallic copper catalyst as recited in the prior art in order to conduct the reaction at a lower temperature and pressure."

The rejection of claim 3 and 4 is respectfully traversed.

Von Werner (1985) specifically discusses two kinds of transition metal catalysts (page 230, line 1): that is, ruthenium or platinum noble metal heterogeneous catalysts, and homogeneous group VIII catalysts. There is **no suggestion** in this reference to use metallic copper catalysts.

The Examiner refers to Von Werner '366 as preparing the fluoroalkyl iodide using a copper catalyst. However, as discussed above, there is no such specific disclosure in the **inventive disclosure** of Von Werner '366. As noted above, Von Werner generally suggests catalyzing the ethylene addition using metals of atomic number 24 to 30, 42 to 48 or 74 to 79, but specifically lists only "cobalt, zinc, molybdenum, silver, cadmium, rhenium and osmium. Particularly good results are obtained with chromium, manganese, nickel, ruthenium, rhodium, palladium or platinum" (column 2, lines 8-13). The only specific disclosure in von Werner '366 for copper catalysts is in the discussion of the known art, and in Comparative Example C.

However, with regard to the known art, Von Werner discloses that the use of copper "gives rise to an appreciable amount of byproducts, as is demonstrated by the comparative experiments given hereafter" (column 1, lines 45-48). This can be seen in Comparative Example C of von Werner '366, which is a known art example using copper, and which results in an appreciable amount of undesirable byproducts being formed.

That is, the general disclosure of von Werner '366 actually **suggests away** from use of copper catalysts. No motivation can be found in von Werner '366 for modifying Von Werner (1985) to use metallic copper catalysts.

Moreover, neither Von Werner (1985) nor von Werner '366 suggests the specific reaction conditions of claim 4.

Claims 3-4 are therefore not obvious over Von Werner ("Konrad et al." [sic]) (Journal of Fluorine Chemistry, 28 (1985) 229-233) and Von Werner (USPN 4,587,366), taken separately or in combination.

**Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Homoto et al. (US 7,038,095) in view of Von Werner (USPN 5,639,923).** (Office Action page 4)

Applicant notes that the present application claims priority of PCT JP03/07643, filed on June 17, 2003; this is the effective US filing date of the application. The present application also claims foreign priority of JP 2002-175831, filed on June 17, 2002.

Homoto et al. has a 371(c) date of July 18, 2003, which is after the effective US filing date of the present application. Homoto et al. US 7,038,095, itself, is therefore **not** prior art. Homoto et al. claims priority of PCT/JP02/00910, filed on February 5, 2002, and this application was published as WO02/062735 on August 15, 2002. However, WO02/062735 was not published in English (see attached copy of the cover page of WO '735), and therefore PCT/JP02/00910 is not prior art under 35 U.S.C. 102(e)(2). WO02/062735 is prior art under 35 U.S.C. 102(a) as of its publication date of August 15, 2002.

Applicant will therefore consider the cited Homoto et al. reference to refer to WO02/062735, which is prior art under 35 U.S.C. 102(a) as of its publication date of August 15, 2002.

The rejection is overcome by the assertion of Applicant's claim for foreign priority of JP 2002-175831, filed on June 17, 2002. The claim for foreign priority has already been made, and Applicant here perfects the claim for foreign priority by the attached verified translation of the priority document.

Applicant submits that the priority document fully supports the present claims. Claims 1-6 of the priority document can be seen to be essentially identical to original claims 1-6 of the present application. Present claim 7 is dependent from claim 3, and recites the additional limitation of reacting the polyfluoroalkylethyl iodide with a carboxylate represented by Formula (V). General support for the further reaction with a carboxylate of Formula (V) may be found in the verified translation of the priority document in paragraph [0016] on page 10, lines 12-19.

Homoto et al. '095 is therefore not prior art for the pending claims, and the rejection of claims 5-7 over Homoto et al. '095 and Von Werner '923 is overcome.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the Applicant's undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, the Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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Enclosures: Verified Translation of JP 2002-175831
Cover Page of WO 02/062735

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